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A reading prognosis test to measure future ability, based on present skills and knowledge, of children from different socioeconomic levels was conducted. It sought to avoid two major shortcomings of standardized reading readiness tests, (1) that few children of low socioeconomic level were included in the norms and therefore scores of these children were not only at the low end of the scale but were clustered among a few numbers, and (2) that no clear differentiation among underlying skills was given.

A sample of children was drawn, with equal numbers from lower and middle socioeconomic levels. The test was constructed to yield scores in three areas, all containing sub-areas. Two of these, perceptual discrimination and language, were designed to measure skills necessary to both beginning and advanced reading. The third area, beginning reading skills, was designed to measure the child's present status.

Three studies were undertaken. In each case, later in the school year a reading achievement test was used as a validity criterion. Normal variability was found in all socioeconomic groups. It was concluded that potentially poor readers can be identified before formal training in reading takes place and that their skill deficiencies can be ascertained.

Tables giving test scores and intercorrelations were included.

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Measurement of Reading Skills in Lower Socio-Economic Status Children[1]

ED002599

by

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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1 Paper read at American Psychological Association Conference, Philadelphia, 1963.

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The present study was undertaken to determine whether a Reading Prognosis Test could be constructed to measure future reading ability based on present skills and knowledge of children from different Socio-Economic Status levels (SES). There are two major shortcomings of standardized reading readiness tests. The first is the type of norm used, i.e., too few children representing Lower SES are included. In previous work with children from Lower SES levels it became apparent that standardized tests did not yield appropriate interpretable scores for children at these levels: the scores earned by these children were not only at the low end of the scale, but were also clustered among a few numbers.

Secondly, no clear rationale of underlying skills is presented in most reading readiness tests. In general, the readiness tests attempt to measure global skills and yield a predictive score on that basis, but the scores do not show a differentiation of the child's present skills. Therefore, the Reading Prognosis Test was constructed in an attempt to correct for both deficiencies.

Method

In order to facilitate the study of children from different SES groups, a balanced sample was drawn, including equal numbers of children from Middle and Lower SES, and equal numbers of Negro and white children.

SES was determined by use of the Institute for Developmental Studies' Socio-Economic Scale which takes into account occupation of adult members of the family, number of rooms in home per occupant, and educational level of adult family members.

The test itself was constructed to yield not only a global reading predictive score but also to provide scores in three areas which would identify the present status of reading skills and of skills underlying

reading. The three areas measured are: Language, Perceptual Discrimination and Beginning Reading Skills. In two of the areas, Perceptual Discrimination and Language, the items were designed to measure levels of skills which underlie both beginning and advanced reading; these skills are considered basic to general reading achievement.

The third area, Beginning Reading Skills, measures the present status of the child in reading. Skills measured in this area require direct use of learned facts and therefore may be indicative of beginning reading ability. However, memorization of these facts does not imply understanding or transfer to more advanced reading skills.

There are several subtests comprising each of the three areas. A Word Meaning Test and a Storytelling test make up the subtests in the Language area. In the Perceptual Discrimination area the three subtests are Visual Similarities, Visual Discrimination, and Auditory Discrimination. The subtests in the Beginning Reading Skills area are Alphabet Letters, and Sight Vocabulary.

Since the Reading Prognosis Test was designed primarily for use with young children at the end of the kindergarten or beginning of the first grade year and since its results are to be used for diagnostic purposes, the test was constructed to be administered individually.

Three studies were undertaken. The first study was completed in June 1961; the second in June 1962 and the third in June 1963.

First Study

The initial pilot study of the test with a group of 40 children was encouraging enough to motivate more definitive analysis. Even with the limitations of a small sample and with administration of the test rather late in the school year, the Reading Prognosis Test correlated with the Gates Primary

Word Reading Test .87. Improvements were made in the format as a result of this pilot study.

Second and Third Studies

For the second and third studies a balanced sample was selected from six schools in New York City. Bases for selection were fourfold: 1. Socio-Economic Status; 2. race; 3. sex; 4. grade. In all, 126 pupils were selected for the second study and 59 for the third.

For both studies, the Reading Prognosis Test was administered within a two week period in October of the school year. In June of the same school year, reading achievement tests were administered to the children of the original group who were present. The tests used as the validity criterion were the Gates Primary Reading Tests: Sentence Reading and Paragraph Reading. In the second study, only the Gates Paragraph Reading was used as the criterion for the third study.

Results of the Second Study

The two major groups by SES, Lower Class and Middle Class, earned significantly different scores on all subtests as well as on total scores. Also, there was an adequate variability in scores among Lower SES groups which provided discrimination data at the lower end of the scale.

The correlations of the Reading Prognosis total test score with the Paragraph Reading test show a range of from .719 for the LC Negro female group to .892 for the MC white male group. The Total group r is .810. The correlations of the Reading Prognosis total test score with the Sentence Reading test show a range of from .614 for the MC Negro female group to .384 for the MC white female group.

Intercorrelations of the Reading Prognosis subtests with the Gates

Reading tests plus an item analysis, showed the need for a revision of three subtests, namely, Auditory Discrimination, Storytelling and Alphabet Letters.

The form of the Reading Prognosis test used in the third study had new items in the Auditory Discrimination and Meaning Vocabulary subtests as well as a new Storytelling test. Capital letters were eliminated from the Alphabet Letters subtests.

Third Study

In this study the Middle Class group earned higher scores on all subtests when compared with the Lower Class groups. Variability of subtest scores by class groups appeared adequate for all subtests except two, Sight Vocabulary and Auditory Discrimination.

The correlations of the Reading Prognosis total test scores with the Paragraph Reading test grade scores show a range of from .60 for the LC white group to .81 for the total white group. Tables 4-8 in the handouts show the intercorrelations between the Reading Prognosis Test and its subtests with the reading achievement test.

As can be seen, the total group data appear to function rather well for all subtests. However, Auditory Discrimination and the Storytelling subtests still yield unacceptable results when viewed alone according to SES grouping.

As far as the Auditory Discrimination test is concerned, the items are too easy for all SES groups. The scoring system of the Storytelling test makes this subtest too difficult in its present form. It is hoped that the revisions to be tested this fall will clear up these problems.

The correlations shown in columns 11, 12, and 13 of the handouts, present the relationships between the three areas of the test and the criterion measure in column 10. Again, the data for the total group and two of the

three areas are adequate. The Language area correlation which includes the Storytelling subtest is low by SES grouping.

Conclusions

Based on the findings of the present study, it is believed that potentially poor readers from any Socio-Economic Status group can be identified before formal training in reading takes place and that their skill deficiencies underlying reading can be ascertained.

Using the revised version of the test, we plan to administer the instrument to 600 pupils this fall in order to provide data for further analysis and refinement of the test.

Measurement of Reading Skills in Lower Socio-Economic Status Children[1]

Tables for Second and Third Studies

by

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[1]Paper read at American Psychological Association Conference, Philadelphia, 1963.

Table 1

Intercorrelations of Subtests and Total Score of the

Reading Prognosis Test: Second Validation Study

(Total Group, N= 1361)

Subtests	Subtests								Total Score	
	1	2	3	4	5	6	7	8	9	10
1. Capital Letters		.933	.580	.465	.578	.659	.174	.337	.804	.716
2. Small Letters			.502	.475	.522	.592	.160	.298	.841	.700
3. Sight Vocabulary				.393	.620	.462	.230	.304	.707	.534
4. Meaning Vocabulary					.402	.517	.603	.479	.560	.468
5. Visual Discrimination						.233	.246	.266	.760	.690
6. Visual Similarities							.236	.263	.306	.342
7. Auditory Discrimination								.084	.349	.184
8. Storytelling									.485	.33
9. Total Score										
10. Reading Grade Score PIR										

Table 2

Intercorrelations of Subtests and Total Score of the

Reading Prognosis Tests Second Validation Study

(MC Group, N= 54)

Subtests	Subtests									
	1	2	3	4	5	6	7	8	9	10
1. Capital letters		.898	.416	.492	.452	.602	.137	.184	.847	.62[illegible]
2. Small letters			.342	.352	.360	.489	.097	.152	.727	.56[illegible]
3. Sight Vocabulary				.264	.363	.319	-.125	.108	.556	.3[illegible]
4. Meaning Vocabulary					.346	.489	.036	.021	.684	.66[illegible]
5. Visual Discrimination						.728	.155	.160	.701	.50[illegible]
6. Visual Similarities							.118	.265	.822	.68[illegible]
7. Auditory Discrimination								.070	.217	.14[illegible]
8. Storytelling									.270	.146
9. Total Score										.772
10. Reading Grade Score PPR										

Table 3

Intercorrelations of Subtests and Total Score of the

Reading Prognosis Test: Second Validation Study

(LC Group, N= 72)

Subtests	Subtests									
	1	2	3	4	5	6	7	8	9	10
1. Capital letters		.915	.435	.668	.575	.669	-.020	.254	.871	.520
2 Small letters			.318	.588	.517	.572	-.004	.157	.811	.554
3. Sight Vocabulary				.357	.528	.432	.000	.300	.635	.407
4. Meaning Vocabulary					.428	.560	-.081	.102	.664	.626
5. Visual Discrimination						.688	.147	.245	.799	.612
6. Visual Similarities							.040	.092	.798	.617
7. Auditory Discrimination								-.049	.242	.033
8. Storytelling									.227	.215
9. Total Score										.721
10. Reading Grade Score PPR										

Table 4

Intercorrelations Between Reading Prognosis Subtest, Total Test, Criterion, and Subtest Area Scores: Third Validation Study

(Total Group, N = 54)

	AL	MV	SV	WV	VS	AD	ST	Tot	PPR RS	PPR GS	PR	Lang	Perc
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Alphabet Letters		.820	.661	.827	.485	.333	.107	.700	.752	.712	.913	.861	.550
2. Meaning Vocabulary			.509	.531	.370	.327	.050	.816	.670	.656	.560	.910	.609
3. Sight Vocabulary				.895	.546	.228	.272	.786	.719	.753	.910	.680	.533
4. Visual Discrimination					.604	.332	.232	.721	.647	.591	.506	.485	.797
5. Visual Similarities						.396	-.030	.557	.444	.421	.565	.249	.851
6. Auditory Discrimination							-.178	.520	.365	.328	.342	.243	.730
7. Storytelling								.460	.982	.373	.257	.766	.768
8. Total Score									.830	.816	.862	.791	.801
9. Reading Raw Score										.935	.807	.643	.604
10. Reading Grade Score											.803	.637	.554
11. Beginning Reading												.517	.544
12. Language													.452
13. Perceptual Discrimination													
Mean	8.60	18.13	4.51	7.51	5.41	13.54	6.54	52.33	15.00	276.27	12.35	10.02	23.40
S.D.	3.73	4.32	3.07	2.33	2.12	2.84	1.03	14.21	8.30	97.35	6.76	6.85	8.71

Table 5

Intercorrelations Between Reading Prognosis Subtest, Total Test, Criterion, and Subtest Area Scores: Third Validation Study (Middle Socio-Economic Status, N= 30)

	AL	NV	SV	VD	VS	AD	ST	Tot	PTR RG	P.R GS	BR	Lang	Perc
	1	2	3	4	5	6	7	8	9	10	11	12	13
Alphabet Letters		.152	.636	.094	.418	.062	-.067	.585	.617	.597	.872	.076	.307
Meaning Vocabulary			.348	.486	.287	.192	.263	.722	.413	.446	.292	.865	.381
Sight Vocabulary				.293	.539	-.028	.091	.769	.611	.625	.532	.301	.400
Visual Discrimination					.440	.484	-.036	.588	.648	.532	.230	.284	.813
Visual Similarities						.220	-.084	.676	.411	.339	.537	.165	.700
Auditory Discrimination							-.172	.310	.168	.122	.012	.05[illegible]	.672
Story Mind								.304	.041	.154	.027	.712	[illegible]
Total Score									.713	.711	.762	.683	.714
[illegible]										[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											.677	.405	[illegible]
[illegible]												[illegible]	[illegible]
Language													[illegible]
[illegible]													
Perc													

Table 6

Intercorrelations Between Reading Prognosis Subtest, Total Test, Criterion, and Subtest Area Scores: Third Validation Study

(Lower Socio-Economic Status, N= 29)

	AL	MV	SV	VD	VS	AD	ST	Tot	PPR RS	PPR GS	PR	Lang	Perc
	1	2	3	4	5	6	7	8	9	10	11	12	13
abet Letters		.501	.544	.450	.485	.426	-.052	.603	.680	.628	.921	.372	.574
ing Vocabulary			.171	.445	.387	.241	.027	.649	.440	.345	.414	.819	.441
t Vocabulary				.567	.519	.271	-.015	.687	.735	.769	.829	.129	.556
al Discrimination					.710	.147	.197	.766	.552	.482	.564	.470	.737
al Similarities						.466	-.266	.759	.453	.450	.566	.146	.936
tory Discrimination							-.145	.583	.264	.278	.411	.113	.728
ytelling								.095	.048	-.020	-.041	.596	-.118
l Score									.723	.574	.859	.576	.882
ing Raw Score										.958	.796	.381	.529
ing Grade Score											.777	.261	.500
ming Reading												.308	.542
guage													.287
eptual Discrimination													
ean	5.66	6.86	2.51	5.62	4.93	2.72	2.75	75.31	10.24	218.93	9.28	11.59	21.24
.D.	3.05	2.96	2.55	2.40	2.76	2.11	2.12	12.60	7.13	66.98	5.49	3.68	6.53

Table 7

Intercorrelations Between Reading Prognosis Subtest, Total Test, Criterion, and Subtest Area Scores: Third Validation Study

(Negro, N= 30)

	AL 1	MV 2	SV 3	VD 4	VS 5	AD 6	ST 7	Tot 8	RPS 9	RGS 10	BR 11	Lang 12	Per 13
1. Alphabet Letters		.507	.687	.382	.542	.438	.117	.774	.766	.730	.924	.392	.58
2. Meaning Vocabulary			.519	.557	.398	.367	.529	.827	.631	.644	.550	.915	.55
3. Sight Vocabulary				.484	.538	.376	.211	.797	.706	.725	.913	.444	.60
4. Visual Discrimination					.495	.269	.328	.698	.644	.593	.470	.526	.74
5. Visual Similarities						.433	.025	.675	.405	.372	.588	.269	.84
6. Auditory Discrimination							.077	.574	.422	.388	.444	.274	.72
7. Storytelling								.488	.402	.371	.177	.826	.17
8. Total Score									.828	.803	.854	.781	.83
9. Reading Raw Score										.939	.802	.67[illegible]	.52
10. Reading Grade Score											.792	.604	.57
11. Beginning Reading												.454	.64
12. Language													.45
13. Perceptual Discrimination													
Mean	8.03	9.73	3.53	7.00	4.97	10.30	5.93	48.50	14.37	255.63	11.57	15.67	22.27
S.D.	3.90	4.50	3.66	2.50	2.82	2.37	2.20	16.46	8.67	95.44	6.65	6.92	6.13

Table 8

Intercorrelations Between Reading Prognosis Subtest, Total Test, Criterion, and Subtest Area Scores: Third Validation Study

(White, N= 29)

	AL	MV	SV	VD	VS	AD	ST	Tot	PPR RS	PPR GS	WP	Lang	Perc
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Alphabet Letters		.529	.604	.440	.386	.330	.279	.785	.712	.672	.893	.525	.474
2. Meaning Vocabulary			.474	.503	.338	.290	.362	.818	.728	.664	.560	.927	.457
3. Sight Vocabulary				.455	.524	.046	.321	.752	.711	.761	.897	.499	.415
4. Visual Discrimination					.712	.384	.051	.722	.612	.550	.500	.413	.841
5. Visual Similarities						.342	-.163	.636	.457	.433	.508	.198	.850
6. Auditory Discrimination							-.075	.464	.281	.235	.209	.196	.730
7. Storytelling								.402	.271	.354	.335	.686	-.080
8. Total Score									.840	.814	.858	.801	.744
9. Reading Raw Score										.935	.795	.677	.544
10. Reading Grade Score											.809	.661	.492
11. Beginning Reading												.572	.496
12. Language													.321
13. Perceptual Discrimination													
Mean	9.28	10.66	5.10	8.03	5.86	10.79	6.55	56.2[illegible]	77.69	295.59	14.38	17.21	24.69
S.D.	3.43	5.20	3.50	2.14	2.73	2.70	2.69	15.20	7.[illegible]	94.91	6.21	6.66	6.10